

AMENDMENTS TO THE CLAIMS

This listing of claims will replace all prior versions and listings of claims in the application:

LISTING OF CLAIMS:

1. (currently amended): A user interface (UI) support apparatus, comprising:
a UI support module operable to store input/output modules as stored input/output modules, wherein the stored input/output modules are selected corresponding to conditions of respective users, in an input/output module storing unit, operable to search the input/output module storing unit for a specific input/output module of one of the respective users, operable to execute the specific input/output module, and operable to support a UI meeting a condition of the one of the respective users,

wherein the UI support module comprises an input/output module selecting unit including a mapping of each of the respective users with corresponding at least one of the stored input/output module, and a data format determining unit for determining whether a searched input/output module provided by the input/output module selecting unit can process a type of data of the UI support module, through a table where the input/output modules and data formats that can be processed in respective input/output modules of the table are mapped.

2. (original): The apparatus as claimed in claim 1, wherein the UI support module comprises:

said input/output module storing unit storing and managing the input/output module;

an input/output module selecting unit for searching for the specific input/output module meeting the condition of the one of the respective users in the input/output module storing unit to provide a searched input/output module;

an input/output module executing unit for executing the searched input/output module searched for by the input/output module selecting unit; and

an input/output processing unit for processing the UI processed in the searched input/output module executed at the input/output module executing unit to output the UI on a first screen.

3. (original): The apparatus as claimed in claim 2, wherein the UI support module further comprises a data processing unit for receiving and processing data necessary for generation and processing of the UI, said data being generated from an appliance that requests the specific input/output module.

4. (canceled).

5. (original): The apparatus as claimed in claim 2, wherein the input/output module storing unit comprises a mapping table comprising storage areas of input/output module IDs and the stored input/output modules.

6. (previously presented): The apparatus as claimed in claim 2, wherein the mapping is a mapping table and the input/output module selecting unit comprises the mapping table comprising condition IDs and input/output module IDs.

7. (original): The apparatus as claimed in claim 2, wherein the input/output processing unit transmits the UI to a remote device with a second screen.

8. (currently amended): A user interface (UI) support apparatus, comprising:
an external UI support module provided in a web server or a home server, operable to receive and store input/output modules corresponding to conditions of respective users, operable to search for a specific input/output module for one of the respective users requested through a household appliance and to provide a searched input/output module to the household appliance, and operable to support a UI meeting a condition of the one of the respective users in the household appliance,

wherein the external UI support module comprises an external input/output module selecting unit including a mapping of each of the respective users with corresponding at least one of the stored input/output modules, and a data format determining unit for determining whether the searched input/output module provided by the external input/output module selecting unit can process a type of data of the external UI support module, through a table where the input/output modules and data formats that can be processed in respective input/output modules of the table are mapped.

9. (previously presented): The user interface (UI) support apparatus as claimed in claim 8, wherein the external UI support module comprises:

an external input/output module storing unit for storing the input/output modules that provide relevant UIs depending on the conditions of the respective user, and

said external input/output module selecting unit searches the external input/output module storing unit for the specific input/output module corresponding to the condition of the one of the respective users requested by the household appliance, and provides a searched input/output module to the household appliance.

10. (canceled).

11. (previously presented): The apparatus as claimed in claim 10, wherein the external input/output module storing unit comprises a mapping table comprising storage areas of input/output module IDs and the stored input/output modules.

12. (previously presented): The user interface support apparatus as claimed in claim 10, wherein the mapping is a mapping table and the external input/output module selecting unit comprises the mapping table comprising condition IDs and input/output module IDs.

13. (currently amended): A user interface (UI) support system, comprising:

an internal UI support module provided in a household appliance, for supporting UIs through input/output modules depending on conditions of respective user; and

an external UI support module provided in a web server or a home server connected to the internal UI support module through a wired/wireless communication network, for managing the input/output modules depending on the conditions of the respective users transmitted through the internal UI support module and providing a specific input/output module requested by the internal UI support module,

wherein the external UI support module comprises an external input/output module selecting unit including a mapping of each of the respective users with corresponding at least one of the input/output modules, and a data format determining unit for determining whether the searched input/output module provided by the external input/output module selecting unit can process a type of data of the external UI support module, through a table where the input/output modules and data formats that can be processed in respective input/output modules of the table are mapped.

14. (original): The system as claimed in claim 13, wherein the internal UI support module comprises:

an input/output module storing unit for storing and managing the input/output modules;

an input/output module selecting unit for searching the input/output module storing unit for the specific internal input/output module meeting a condition of one of the respective users to provide a searched input/output module;

an input/output module executing unit for executing the searched input/output module searched for by the input/output module selecting unit;

a data processing unit for receiving and processing data necessary for generation and processing of the UI, said data being generated from the household appliance that requests the input/output module; and

an input/output processing unit for processing the UI processed in the searched input/output module executed at the input/output module executing unit to output the UI on a first screen.

15. (original): The system as claimed in claim 14, wherein the input/output module storing unit comprises a mapping table comprising storage areas of input/output module IDs and the input/output module.

16. (previously presented): The system as claimed in claim 14, wherein the mapping is a mapping table and the input/output module selecting unit includes the mapping table comprising condition IDs and input/output module IDs.

17. (original): The system as claimed in claim 14, wherein the input/output processing unit transmits the UI to a remote device with a second screen.

18. (previously presented): The system as claimed in claim 13, wherein the external UI support module comprises:

an external input/output module storing unit for storing the input/output modules that provide relevant UIs depending on the conditions of the respective users, and

said external input/output module selecting unit searches the external input/output module storing unit for the specific input/output module corresponding to the condition of the one of the respective users requested by the household appliance and provides a searched input/output module to the household appliance.

19. (canceled).

20. (original): The system as claimed in claim 18, wherein the external input/output module storing unit comprises a mapping table comprising storage areas of input/output module IDs and input/output modules.

21. (previously presented): The system as claimed in claim 18, wherein the mapping is a mapping table and the external input/output module selecting unit comprises the mapping table comprising condition IDs and input/output module IDs.

22. (currently amended): A user interface (UI) support method, comprising:

an input/output module registering operation of receiving input/output modules meeting conditions of respective users as received input/output modules and registering the received input/output modules in an internal input/output module selecting unit of an internal UI support module;

an input/output module providing operation of, if a first specific input/output module of one of the respective users is requested through the internal UI support module, searching for and providing the first specific input/output module as a provided input/output module; and

a UI support operation for executing the provided input/output module and supporting a UI meeting the condition of the one of the respective users through the provided input/output module,

wherein the internal input/output module selecting unit includes a mapping of each of the respective users with corresponding at least one of the registered input/output modules,

wherein the input/output modeling providing operation comprises an operation of providing the UI meeting the condition of the one of the respective users through the input/output module provided by an external UI support module,

wherein the operation of providing the UI meeting the condition of the one of the respective users through the input/output module provided by an external UI support module comprises:

determining whether the first specific input/output module corresponding to a condition ID received from the one of the respective users is present by an external input/output module selecting unit of the external UI support module;

if it is determined that the first specific input/output module corresponding to the condition ID is not present, providing the UI through a default input/output module; and
if it is determined that the first specific input/output module corresponding to the condition ID is present, determining, by a data format determining unit, whether the first specific input/output module is compatible with an appliance requesting the first specific input/output module, and providing the UI through the default input/output module if it is determined that the first specific input/output module is not compatible with the appliance, or providing the UI through the first specific input/output module if it is determined that the input/output module is compatible with the appliance.

23. (original): The method as claimed in claim 22, wherein the input/output module registering operation comprises:

selecting a second specific input/output module for generating a UI to be used in the future by the one of the respective users, as a selected input/output module;

determining whether the selected input/output module is present in an internal input/output module storing unit of the internal UI support module;

if the selected input/output module is present, writing a condition ID of the one of the respective users and information on the selected input/output module in the internal input/output module selecting unit; and

if the selected input/output module is not present, requesting the selected input/output module through an external UI support module, determining whether the selected input/output

module is present in an external input/output module storing unit of the external UI support module, and if the selected input/output module is present, writing the condition ID of the one of the respective users and the information on the selected input/output module in the internal input/output module selecting unit.

24. (previously presented): The method as claimed in claim 23, wherein the operation of writing further comprises writing the condition ID of the one of the respective users and the information on the selected input/output module in an external input/output module selecting unit.

25. (previously presented): The method as claimed in claim 23, wherein if the selected input/output module is not present in the external input/output module storing unit, providing the UI through a default input/output module.

26. (original): The method as claimed in claim 22, wherein the input/output module providing operation comprises:

receiving a condition ID from the one of the respective users and determining whether the condition ID has been registered through the internal input/output module selecting unit;

if the condition ID has been registered, selecting the first specific input/output module according to the condition ID and providing the UI meeting the condition of the one of the respective users; and

if the condition ID has not been registered, requesting an external UI support module to transmit the first specific input/output module according to the condition ID and providing the UI meeting the condition of the one of the respective users through the input/output module provided by the external UI support module.

27. (canceled).

28. (currently amended): A user interface support method, comprising:

if an input/output module corresponding to a specific condition ID is requested by a UI support module provided in a household electric appliance, searching for the input/output module corresponding to the condition ID through an external input/output module storing unit; and

if the input/output module corresponding to the condition ID is found as a searched input/output module, providing, by an external input/output module selecting unit, the searched input/output module to the UI support module of the household appliance,

wherein the searching for the input/output module corresponding to the condition ID comprises searching a mapping of each of a plurality of users with corresponding at least one of the stored input/output modules, wherein the operation of providing the searched input/output module comprises determining, by a data format determining unit, whether the searched input/output module is compatible with the household appliance, and providing a default input/output module if the searched input/output module is not compatible with the household

appliance, or providing the searched input/output module if the searched input/output module is compatible with the household appliance.

29. (canceled).

30. (currently amended): A user interface (UI) support method, comprising:
receiving input/output modules meeting conditions of respective users as received
input/output modules and registering the received input/output modules in an input/output
module selecting unit of an internal UI support module;

if a specific input/output module of one of the respective users is requested through the
internal UI support module, determining whether the input/output module is present in an
input/output module storing unit; and

if the specific input/output module is present in the input/output module storing unit,
providing a UI meeting the condition of the one of the respective users through the specific
input/output module, or if the specific input/output module is not present in the input/output
module storing unit, requesting an external input/output module storing unit provided in an
external server at a remote place to transmit the specific input/output module as a transmitted
input/output module and providing the UI meeting the condition of the one of the respective
users through the transmitted input/output module,

wherein the determining whether the input/output module is present in the input/output
module storing unit comprises searching a mapping of each of the respective users with

corresponding at least one of received input/output modules, wherein the operation of providing the UI comprises determining, by a data format determining unit, whether specific input/output module is compatible with the internal UI support module, and providing the UI through a default input/output module if the specific input/output module is not compatible with the internal UI support module, or providing the UI through the specific input/output module if the specific input/output module is compatible with the internal UI support module.

31. (previously presented): The method as claimed in claim 30, wherein the input/output module registering operation comprises:

selecting the specific input/output module for generating the UI to be used in the future by the one of the respective users, as a selected input/output module;

determining whether the selected input/output module is present in the input/output module storing unit of the internal UI support module;

if the selected input/output module is present, writing a condition ID of the one of the respective users and information on the selected input/output module in the input/output module selecting unit; and

if the selected input/output module is not present, requesting the selected input/output module through an external UI support module, determining whether the selected input/output module is present in the external input/output module storing unit of the external UI support module, and if the selected input/output module is present, writing the condition ID of the one of

the respective users and the information on the selected input/output module in the internal input/output module selecting unit.

32. (previously presented): The method as claimed in claim 31, wherein the operation of writing further comprises writing the condition ID of the one of the respective users and the information on the selected input/output module in an external input/output module selecting unit.

33. (canceled).

34. (previously presented): The method as claimed in claim 31, wherein if the selected input/output module is not present in the external input/output module storing unit of the external UI support module, providing the UI through a default input/output module.

35. (previously presented): The apparatus as claimed in claim 1, wherein the input/output selecting unit searches the mapping for the specific input/output module corresponding to one of the users, to provide a searched input/output module.

36. (previously presented): The apparatus as claimed in claim 1, wherein the mapping is prestored in the input/output module selecting unit and the input/output selecting unit

searches the prestored mapping for the specific input/output module corresponding to the one of the users, to provide a searched input/output module.

37. (previously presented): The apparatus as claimed in claim 1, wherein the one of the users is an authenticated user in an authentication and the mapping is prestored prior to the authentication.